

# Achieving Your Petroleum Reduction Requirements

U.S. DEPARTMENT OF  
**ENERGY**

Energy Efficiency &  
Renewable Energy



Mark Reichhardt, DOE-FEMP  
Navid Ahdieh, NREL

***Washington Auto Show***

January 29, 2014

## REDUCE PETROLEUM CONSUMPTION

- Why?
  - Reduce greenhouse gas emissions
    - E.O. 13514 greenhouse gas reduction targets
  - Reduce dependence on foreign oil imports
  - Insulate against price volatility, thereby reducing costs

Reduce petroleum consumption by 30% between 2005 and 2020 (2% per year)

- E.O. 13423 and E.O. 13514
- EISA 2007, section 142



Fuel that is **counted** includes **all petroleum fuel used in all vehicles that are subject** to the petroleum reduction requirements, as outlined below:

- **Gasoline** fuel consumption in subject vehicles

**AND**

- **Diesel** fuel consumption in subject vehicles

**AND**

- **Diesel component of biodiesel blends** (20 percent or greater) used in subject vehicles

Fuel that is **not counted** includes:

- **Petroleum used in exempt vehicles** (military tactical, law enforcement, emergency response, etc.)



**OR**

- **Alternative fuels**

**OR**

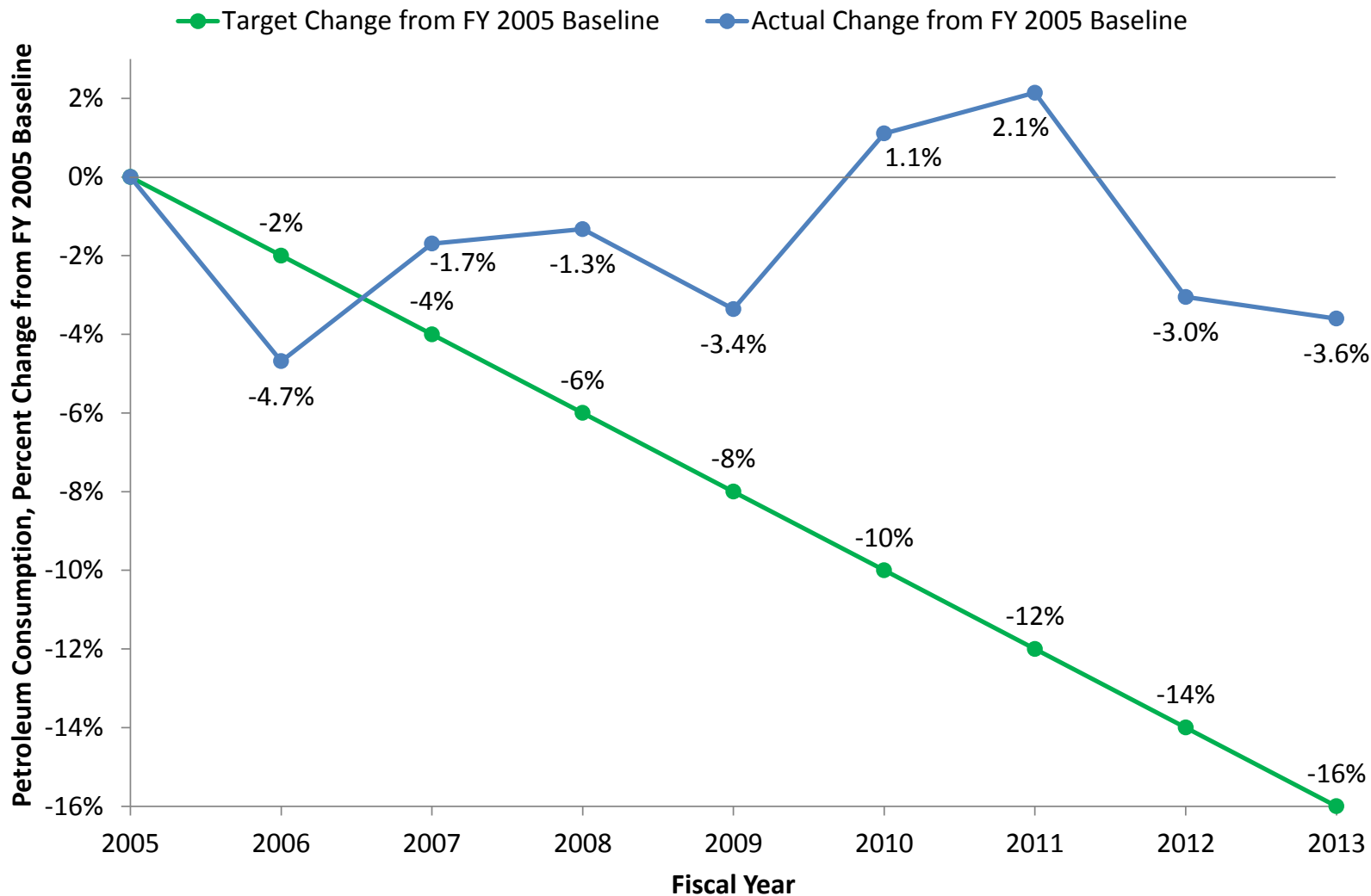
- **Biodiesel component of biodiesel blends** (20 percent or greater)

# Federal Performance on Key Fleet Energy Metrics, FY 2013 (Preliminary)

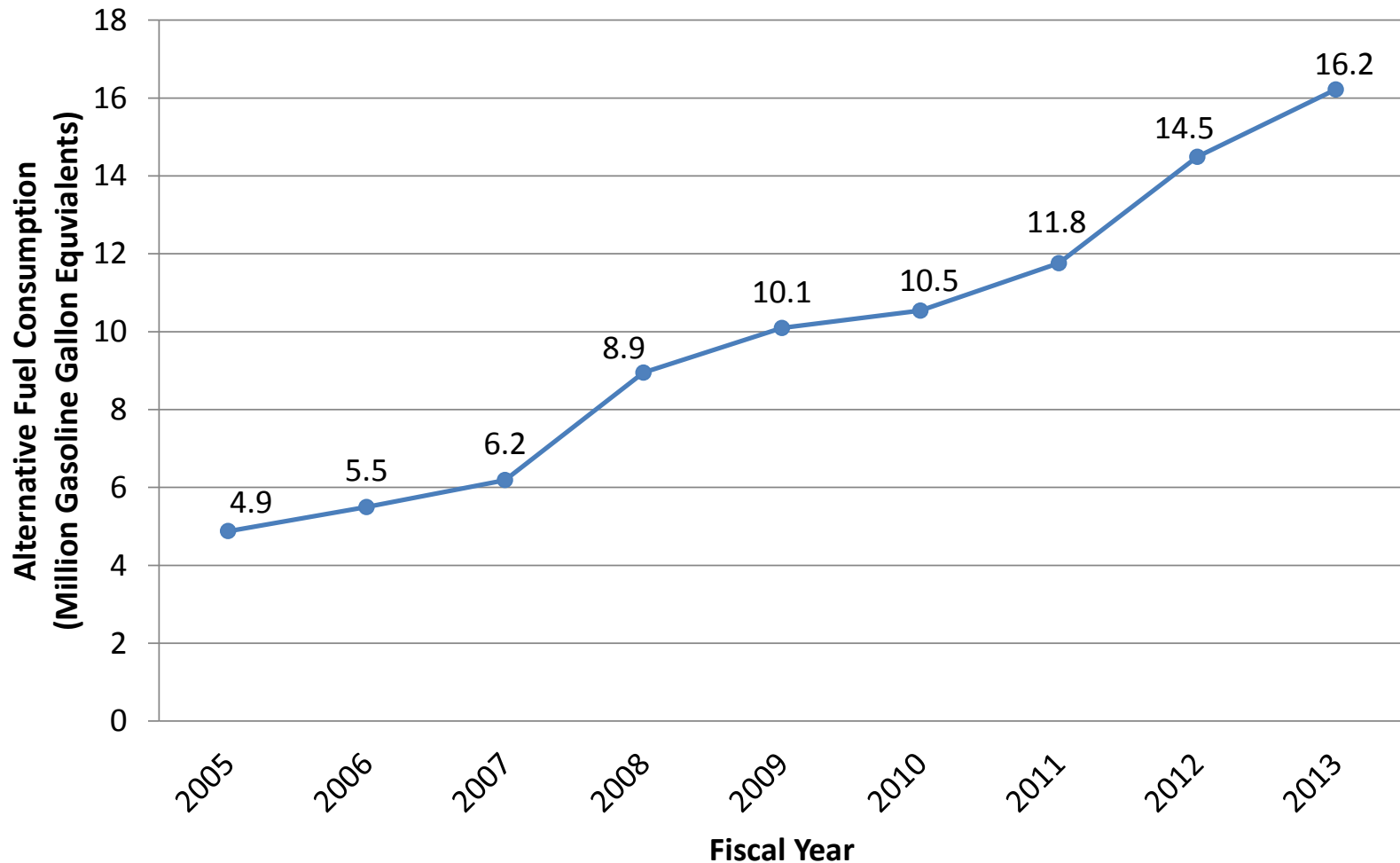
	<i><b>Requirement</b></i>	<i><b>Performance</b></i>
<i><b>EO 13514 Petroleum Reduction</b></i>	Reduce annual petroleum use by <b>16%</b> from FY05 baseline (for FY13)	 <b>3.6 percent</b> below baseline
<i><b>EO 13423 Alternative Fuel Use</b></i>	Increase alternative fuel use by <b>114.4%</b> from FY05 baseline (for FY13), and alternative fuel use is greater than <b>5%</b> of total fuel use	 <b>232.4 percent</b> Alternative fuel 5.3% of total fuel use

# Change in Petroleum Consumption, 2005-2013

## Change in Federal Fleet Petroleum Consumption, FY 2005 - FY 2013

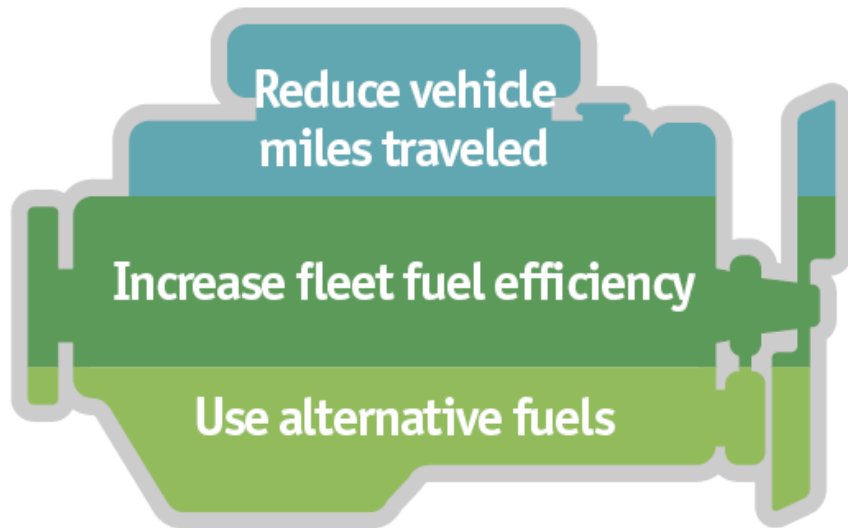


## Federal Fleet Annual Alternative Fuel Consumption, Fiscal Years 2005 - 2013





# The Driving Principles of Petroleum Reduction



## Reducing VMT in completing mission

*Consolidating trips*

*Video and Web conferencing*

*Using mass transportation/shuttles*

*Improving routing*

## Replacing existing vehicles with higher fuel economy vehicles

*Right-sizing vehicles*

*Includes HEVs and LSEVs*

## Operational changes

*Improved maintenance*

*Driving more efficiently*

*Avoiding Idling*

## Maximize displacement of petroleum w/ alternative fuels

*E85, CNG, etc. that require infrastructure and AFVs*

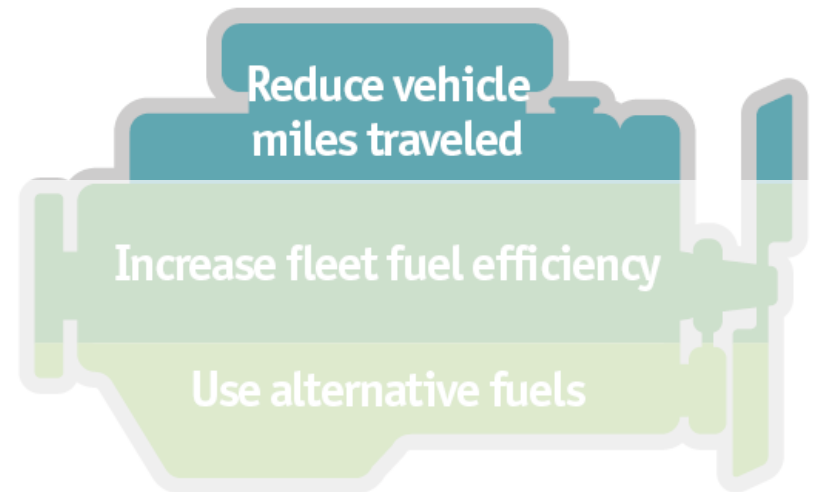
*B20 that requires infrastructure*

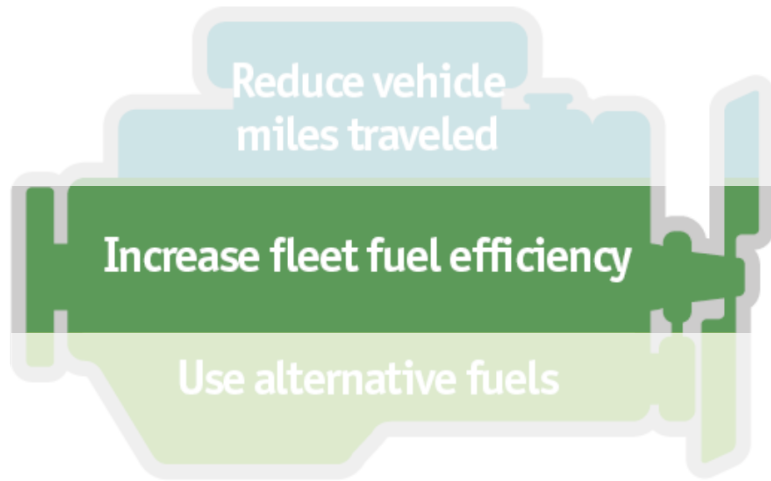
*EVs and charging infrastructure*



## No-Cost Solutions for All Vehicle Types

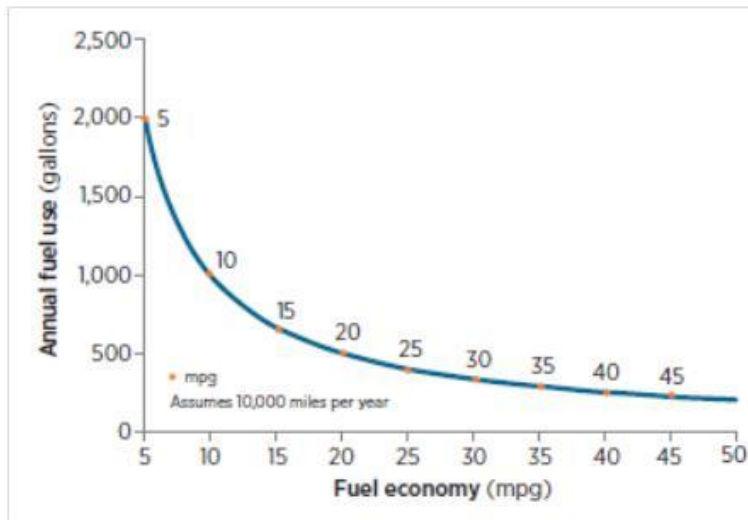
- Consolidate trips
- Eliminate trips
- Use mass transportation
- Use agency shuttles, long-term rentals & LSEVs
- Improve scheduling and routing

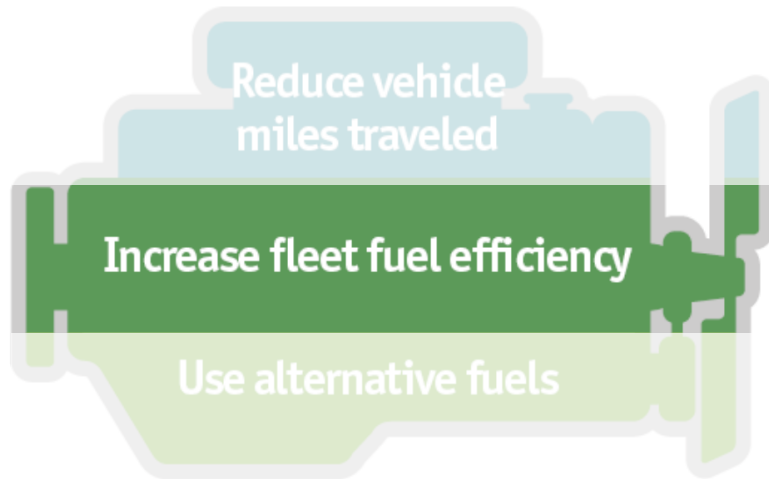




## Acquire higher fuel economy vehicles

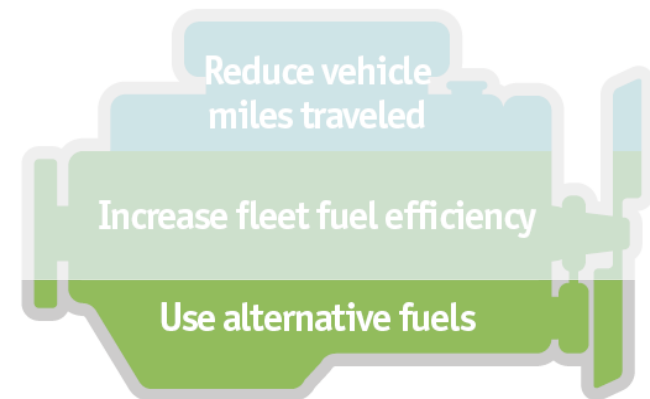
- VAM
  - Will a smaller vehicle get the job done?
  - Is there a more fuel efficient vehicle that would meet my needs?
  - Do I have access to alternative fuels?
- Focus on least efficient vehicles





- Acquire hybrid electric vehicles (HEVs)
  - Where alt fuel is unavailable
- Maintain vehicles to improve fuel economy
- Drive more efficiently
- Avoid excessive idling

- Alternative fuels include:
  - E85, CNG, LNG, LPG – dual-fueled AFVs MUST use alt fuel
  - Neat (100%) biodiesel (B100) or biodiesel blends
  - Electricity
- Acquire AFVs & maximize alt fuel use
  - Locate AFVs near existing / planned alt fuel infrastructure
- Install alt fuel infrastructure
  - To replace conventional fuel supply in high-use sites (> 100k gal of gas/diesel)
- Coordinate with local fleets
  - Aggregate demand through Clean Cities coalitions



- FEMP training
- FEMP communications – website, guidance, handbook
- AFDC
- Clean Cities coalitions
- FleetDASH

## Fleet Sustainability Dashboard

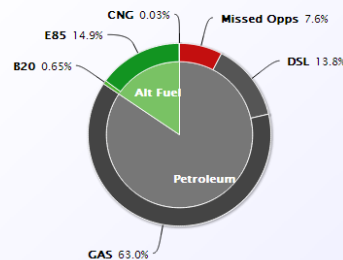
EERE > Federal Energy Management Program > Sustainable Federal Fleets > Fleet Sustainability Dashboard > Sample Department Leased Fleet Fuel Use

[Printable Version](#)

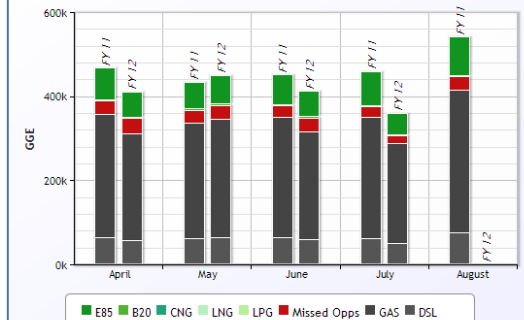
### Sample Department Leased Fleet Fuel Use

For questions or comments, or to provide feedback, please contact [Ryan Daley](#) at the National Renewable Energy Laboratory (NREL) at (303) 275-4466.

Fuel Used by Type (FY 2012 to Date)



Monthly Total Fuel Consumption: FY11 and FY12



Fleet	Petroleum		Alt Fuels		FYTD Total Fuel Use (GGE)	Missed Opportunities	
	Total GGE	% of Total Fuel Use	Total GGE	% of Total Fuel Use		Total GGE	% of Total Fuel Use
Fleet 1	745	100%	0	0%	745	63.3	8.5%
Fleet 2	4,722	87.8%	656	12.2%	5,378	995	18.5%
Fleet 3	791,891	82.0%	173,503	18.0%	965,394	87,659	9.1%

# FEMP Training Sessions at the 2014 Washington Auto Show

Thursday, January 30	
8:30 a.m.–9:30 a.m.	Understanding Driver Refueling Behavior
9:45 a.m.–10:45 a.m.	Using FleetDASH to Reduce Petroleum Consumption
2:15 p.m.–3:15 p.m.	Complying with the Requirement to Use Alternative Fuel in Dual-Fuel Vehicles (Section 701 of EPCA 2005)

# Training for Drivers on Using Alternative Fuel



- 15-minute, on-demand training
- Participants learn:
  - The requirements of Section 701 of EPCa 2005 to use alternative fuel in dual-fuel vehicles
  - How to identify dual-fuel vehicles
  - How to locate alternative fuel stations



## federalfleets.energy.gov

- Compliance requirements
- Guidance & handbook
- Alternative fuel infrastructure development
- Performance data
- Information resources



- Guidance
  - Guidance on Federal Fleet Management
    - Resources for understanding requirements
    - Audience: Agency senior sustainability officers and headquarters-level fleet managers
    - [https://federalfleets.energy.gov/sites/default/files/static\\_page\\_docs/fleetguidance\\_13514.pdf](https://federalfleets.energy.gov/sites/default/files/static_page_docs/fleetguidance_13514.pdf)
- Handbook
  - Comprehensive Federal Fleet Management Handbook
    - Resources for meeting requirements
    - Audience: Headquarters-level and location fleet managers
    - [https://federalfleets.energy.gov/sites/default/files/static\\_page\\_docs/eo13514\\_fleethandbook.pdf](https://federalfleets.energy.gov/sites/default/files/static_page_docs/eo13514_fleethandbook.pdf)

# Alternative Fuels Data Center (AFDC)

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## Alternative Fuels Data Center

Alternative Fuels Data Center  
Search Help ▾

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### Fuels & Vehicles

[More Fuels & Vehicles ▸](#)



### Alternative fuels, to go

Download the new Alternative Fueling Station Locator iPhone app.



### The Information Source for Alternative Fuels and Advanced Vehicles

The Alternative Fuels Data Center (AFDC) provides information, data, and tools to help fleets and other transportation decision makers find ways to reduce petroleum consumption through the use of alternative and renewable fuels, advanced vehicles, and other fuel-saving measures.

### Maps & Data

[More Maps & Data ▸](#)

- U.S. Alternative Fueling Stations by Fuel Type
- Alternative Fuel Vehicles in Use
- U.S. Hybrid Electric Vehicle Sales by Model

#### Fuel Prices ▸



Compare alternative fuel prices to gasoline.

### Tools

[More Tools ▸](#)

- Laws & Incentives
- Petroleum Reduction Planning Tool
- Vehicle Cost Calculator
- Light-Duty Vehicle Search
- Heavy-Duty Vehicle Search

Find State Information

Select a state ▾

#### Station Locator ▸



Find alternative fueling station locations.

Find stations on your iPhone 

### Poll

I am primarily interested in

☐ Finding alternative

[www.afdc.energy.gov](http://www.afdc.energy.gov)

# Alternative Fueling Station Locator Website and Mobile App

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[afdc.energy.gov/locator/stations](https://afdc.energy.gov/locator/stations)

Find Stations

Plan a Route

San Diego

Go

Ethanol (E85)

more search options

B

**Propel Fuels - Bonita Point Union 76**

1495 East H St  
Chula Vista, CA 91910

Phone: 619-421-7600

Fuel: Ethanol (E85)

Access: Public - see hours

Distance: 10 mi

C

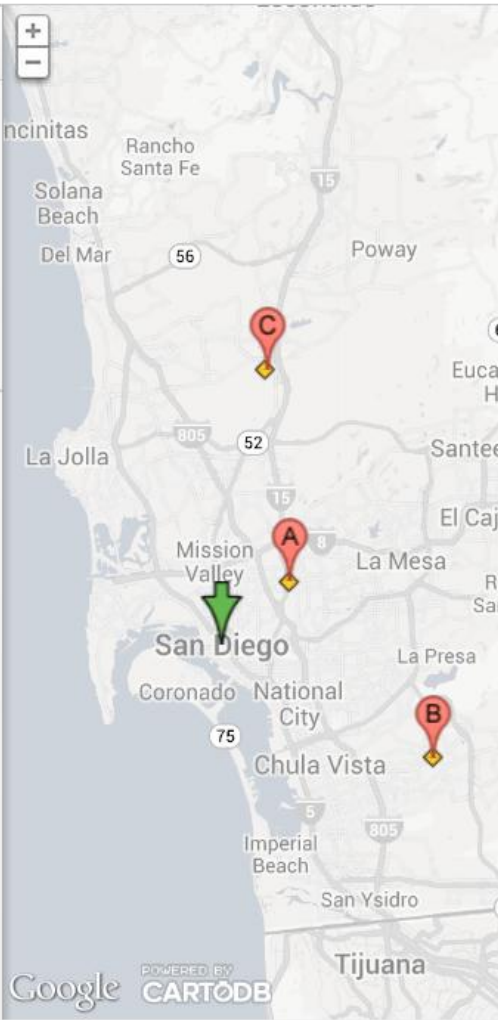
**Miramar Marine Corps Air Station**

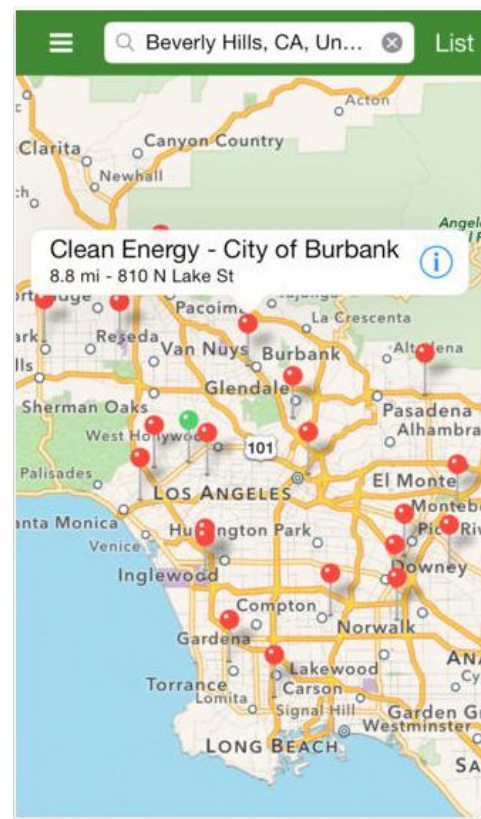
Miramar Way  
San Diego, CA 92145

Fuel: Ethanol (E85)

Access: Private - government only

Distance: 12 mi

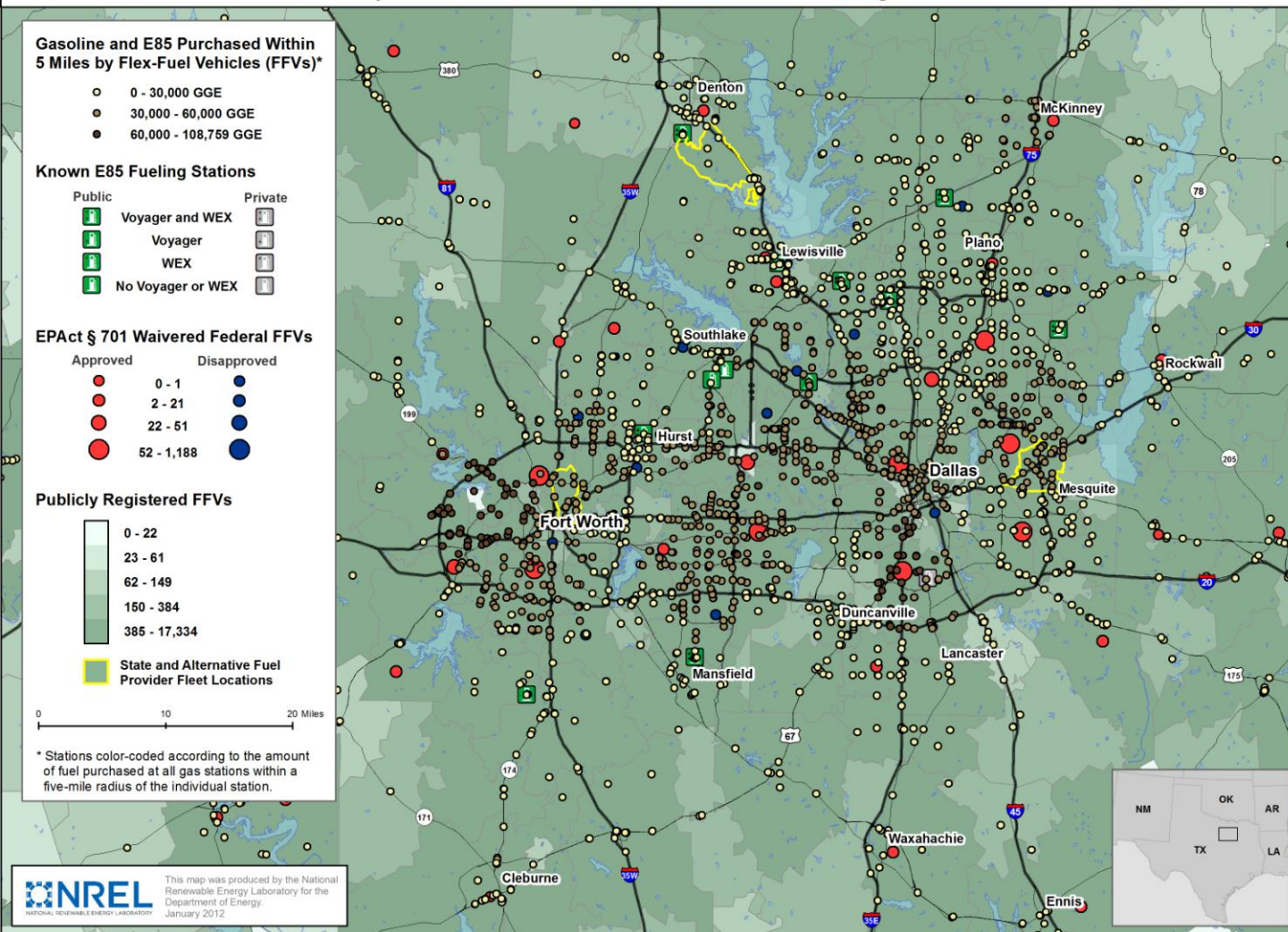






## Dallas - Ft. Worth, Texas

Gasoline and E85 Purchased by GSA Leased Federal Fleet Vehicles during Fiscal Year 2011



Identifying 'hot spots' of Federal fleet activity where

- (1) existing alternative fuel infrastructure is underutilized and
- (2) new infrastructure could be best located to serve Federal fleet vehicles.

# Clean Cities Coalitions Help Develop Alternative Fuel Infrastructure

[cleancities.energy.gov](http://cleancities.energy.gov)



[federalfleets.energy.gov/FleetDASH](https://federalfleets.energy.gov/FleetDASH)

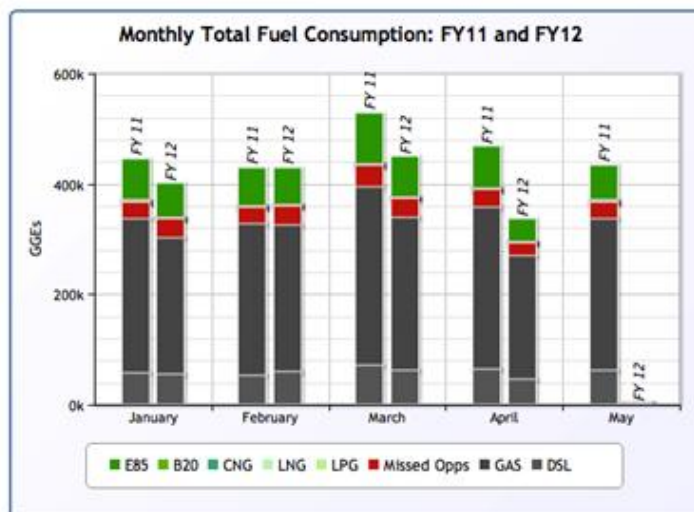
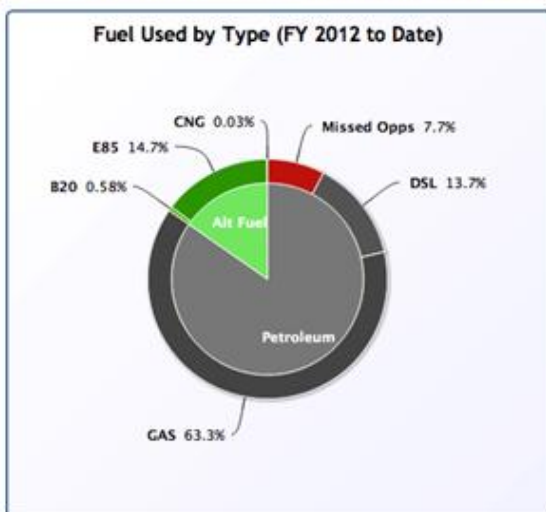
- Uses credit card transaction data to track fuel consumption in vehicles
- Identifies successes as well as “missed opportunities” for dual-fuel vehicles to use alternative fuel when it was available nearby
- Empowers fleet managers to identify and address sources of missed opportunities to use alternative fuel
- 16 participating agencies



# Fleet Sustainability Dashboard (FleetDASH)

Track Fuel Consumption for Agency and Sub-Organizations

## Sample Department Leased Fleet Fuel Use



Fleet	Petroleum		Alt Fuels		FYTD Total Fuel Use (GGE)	Missed Opportunities	
	Total GGE	% of Total Fuel Use	Total GGE	% of Total Fuel Use		Total GGE	% of Total Fuel Use
Fleet 1	745	100%	0	0%	745	63.3	8.5%
Fleet 2	4,722	87.8%	656	12.2%	5,378	995	18.5%
Fleet 3	791,891	82.0%	173,503	18.0%	965,394	87,659	9.1%
Fleet 4	670,423	77.0%	200,577	23.0%	871,000	73,202	8.4%
Fleet 5	90,018	70.7%	37,230	29.3%	127,249	13,160	10.3%
Fleet 6	479,504	97.3%	13,121	2.7%	492,625	17,895	3.6%
Fleet 7	15,930	97.0%	493	3.0%	16,422	1,234	7.5%
Fleet 8	2,622	63.8%	1,488	36.2%	4,110	330	8.0%
Fleet 9	335,091	98.5%	5,128	1.5%	340,219	23,225	6.8%
<b>Total:</b>	<b>2,390,946</b>	<b>84.7%</b>	<b>432,196</b>	<b>15.3%</b>	<b>2,823,141</b>	<b>217,764</b>	<b>7.7%</b>

# Fleet Sustainability Dashboard (FleetDASH)

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Renewable Energy

## View Vehicle Details

Drill Down to Individual Vehicles and Fuel Transactions

Search

Fleet:  Tag:

Missed Opportunity Summary: 8 Missed Opportunities totaling 105 GGEs involving 4 vehicles.

### Vehicles in the Federal Supply Service; All Other fleet

Tag	Vehicle Fuel Type	Petroleum		All Fuels		This Month Total Fuel Use (GGE)	Missed Opportunities	
		Total GGE	% of Total Fuel Use	Total GGE	% of Total Fuel Use		Total GGE	% of Total Fuel Use
G111377G	E85	44	100%	0	0%	44	41	93%
G414981Q	E85	35	100%	0	0%	35	35	100%
G411690H	E85	14	100%	0	0%	14	14	100%
G107115H	E85	13	100%	0	0%	13	13	100%
G410601E	DSL	9	100%	0	0%	9	0	0%

**Vehicle Details (G11-1377G)**

**Customer Detail:**  
 RANDAL PATTERSON  
 Federal Supply Service, All Other  
 GSA, AREA PROPERTY OFFICE - 12575 NORTH  
 SKODA DRIVE  
 MARANA, AZ 856530000  
 RANDAL.PATTERSON@GSA.GOV  
 (520)4000308 - Ext:

**Vehicle Detail:**  
 Tag: G11-1377G  
 Make/Model: CHEVROLET - IMPALA  
 Fuel Type: Ethanol / Unleaded Gasoline  
 Vehicle Type: Sedan/St Wgn Midsize  
 BOAC: 479142  
 SIN: 108.11GA  
 Garage Zip: 85653  
 Date Assigned: 4/26/08  
 Emergency Response: No  
 Law Enforcement: No  
 Avg Monthly Mileage: 537.00

Vehicle 1 of 15 on this page

### Transactions corresponding to Tag# G111377G from the Federal Supply Service; All Other fleet

Station Name	Address	City	State	Zip	Fuel Type Purchased	Date	GGEs Purchased	Missed Opportunity	Alternate Station
Circle K - 01947	5501 E GOLF LINKS RD	Tucson	AZ	85711	GAS	2013-02-01	4.05	Yes	Alternate Station
Giant Store 6616	6150 S KOLB RD	Tucson	AZ	85756	GAS	2013-02-04	12.81	Yes	Alternate Station
Giant Store 6616	6150 S KOLB RD	Tucson	AZ	85756	GAS	2013-02-08	14.23	Yes	Alternate Station
Giant Store 6616	6150 S KOLB RD	Tucson	AZ	85756	GAS	2013-02-14	10.18	Yes	Alternate Station

## Compare Transaction Locations to Alternative Fuel Locations

**Find Stations** **Plan a Route**

5501 E GOLF LINKS RD

Ethanol (E85)

Ethanol stations near 5501 E GOLF LINKS RD Tucson AZ 85711  
 Excluding private stations  
 Payment: DEBIT  
 Within 5 miles

**FastLane Chevron**  
 1999 E Ajo  
 Tucson, AZ 85713  
 Phone: 520-664-3901  
 Fuel: Ethanol (E85)  
 Distance: 4.1 mi

Map data ©2013 Google - Terms of Use

U.S. DEPARTMENT OF **ENERGY** Energy Efficiency & Renewable Energy Source: Alternative Fuels Data Center

- National Park Service – Clean Cities partnership
  - 3 current national parks; expanding to 5 more
  - Alternative fuel access and alt fuel vehicle deployment in non-urban areas
  - Annual savings of \$450,000
  - Reduce nearly 13,000 gallons of gasoline & 100+ tons of GHG
- FAA local fleet success (Cheyenne, WY)
  - Lost access to only local public E85 infrastructure
  - Local fleet manager worked with local AFB, DLA, and GSA to gain access to E85 on air force base
- NAVFAC E85 station in Hawaii
  - Reducing petrol consumption by 16% per month
  - Elimination of need for EPA 2005 Sec 701 waiver requests

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